



Honorable Ajit Pai, Chairman  
Honorable Michael O’Rielly, Commissioner  
Honorable Brendan Carr, Commissioner  
Honorable Jessica Rosenworcel, Commissioner  
Honorable Geoffrey Starks, Commissioner  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

*Reference: WT Docket No. 17-200, In the Matter of Review of the Commission’s Rules  
Governing the 896-901/935-940 MHz Band*

Dear Chairman Pai and Commissioners O’Rielly, Carr, Rosenworcel and Starks:

Ameren is extremely interested in the rapid adoption of a broadband solution in the 900 MHz band. We believe that a 900 MHz private enterprise network will allow us to align our communications capabilities with our evolving electric grid needs. The proposal from pdvWireless, Inc. (PDV) and the Enterprise Wireless Alliance (EWA), and now the Federal Communication Commission (FCC) Notice of Proposed Rulemaking (NPRM), provide a vehicle for the integration of broadband into our communications facilities. The key is speed.

As discussed in more detail below, Ameren is seeking a broadband solution now. Our recent pilot project, approved through an Experimental License grant from the Commission, illustrates the immediacy of our interest. We have visited the Commission during this proceeding to voice our support for a 900 MHz solution. Our request is that you act quickly to adopt an Order that will establish rules providing for a private enterprise broadband solution in the band while preventing holdouts from delaying the amazing benefits that broadband can bring to the utility sector.

## **BACKGROUND**

Ameren is a publicly traded utility providing energy services to approximately 2.4 million electric customers and 900,000 natural gas customers across 64,000 square miles in Illinois and Missouri. We currently operate a number of narrowband wireless systems but are pursuing a more integrated, cost-effective broadband solution to address a range of network, SCADA and mobile workforce needs. We are working with PDV, Nokia, and other equipment vendors on this effort.

In the NPRM, the Commission correctly concluded that “[e]lectric and other utilities need broadband capacity to support smart grid and other next generation communications systems.”<sup>1</sup> Without private, utility-grade, broadband connectivity on licensed spectrum, our ability to meet the evolving needs of our company will be severely harmed. We are not alone in this need. Over the last two years, we have witnessed a significant increase in utility interest in broadband. Whether through the need to manage a changing power distribution model, address a growing influx of data, continue and expand our efforts to prevent cyber and physical damage to our networks, or communicate more robustly with our employees in the field, broadband is the solution.

Ameren is the first regulated Investor-Owned Electric Utility to move forward with a private LTE pilot for its internal use on grid modernization, but we are not alone. As a member of the Electric Power and Research Institute (EPRI), our Telecom Initiative has spent a considerable amount of time researching the value of private Long Term Evolution (LTE) solutions for this industry. We have identified strong interest from other utilities in finding spectrum solutions to enable this technology that will benefit the industry. Low band spectrum like 900 MHz is optimal as it has better penetration and propagation characteristics that support greater reliability at a lower total cost of ownership that is important to our EPRI stakeholders.

## **AMEREN’S BROADBAND NEEDS**

Ameren submitted a report on our Smart Energy Plan to the Missouri Public Utilities Commission in February 2019. That Plan highlighted the need to invest in technology that changes the way energy companies and the energy grid will operate in the future. “Electrification of the transportation and industrial sectors will improve the efficient utilization of the grid while significantly benefiting the environment. Rising customer needs and expectations for greater energy reliability, security and control over energy usage requires us to innovate and upgrade our system. Changing customer needs challenge us to introduce specialized products and services that give customers greater control over their energy usage.”<sup>2</sup> The Plan states: “To enable the grid of the future, the system requires a smarter, stronger and more secure communications network with far greater bandwidth. Our plan is to develop

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<sup>1</sup> NPRM at ¶18.

<sup>2</sup> <https://www.ameren.com/-/media/missouri-site/files/smartenergyplan/report-on-ameren-missouris-smart-energy-plan.pdf?la=en-us-mo&hash=B9197A31304A0305D1F43DF8F5731DC78BF3D14A>

a wireless footprint statewide, starting with the St. Louis metropolitan area....”<sup>3</sup> This wireless system was identified as a private LTE system.

Ameren envisions a future where broadband plays a key role in the control and management of our network and in communications with our employees. In our experimental license we stated our desire to test LTE equipment on 900 MHz spectrum. The testing is intended to confirm that an up to 3 MHz broadband service can be deployed on 900 MHz spectrum using LTE-certified Band Class 8 equipment to provide the necessary capacity and latency for the identified use cases. The testing is also a “proof of concept” opportunity to determine whether LTE data speeds and capacity can support the important fixed field-area functions and applications that are currently conducted on narrowband systems or on legacy copper-based circuits that may be de-constructed.

Ameren intends to use a private LTE network for a wide range of uses – uses that likely will expand over time. For the experimental license alone, we are investigating, among other matters, the scale that is derived from a private LTE platform using 900 MHz spectrum and its functionalities:

- Switching between private and public LTE
- S&C Teaming/Interruptions
- Engineering Access
- VOIP
- Corp LAN
- SCADA: Ethernet and Serial
- AMI or AMI Backhaul
- Serial Mirrored Bits
- Cap Band Controllers Controls
- Underground Installation
- Distribution and Gas System Sensors and Controls,
- Substation Backhaul,
- Monitoring and Control of Customer-owned Distributed Energy Inverters.

The applications at the Experimental License sites include SCADA, remote engineering access, WiFi, telephony, push-to-talk, and general workforce mobility applications.

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<sup>3</sup> *Id.*

One of the benefits of 900 MHz band spectrum is that LTE equipment already is available, which we have been able to utilize during the pilot project. As we stated in our experimental application, “it should be noted that this is experimental equipment only to the extent that it has not yet been certified for use on Part 90 spectrum; the models Ameren plans to test are certified LTE Band Class 8 equipment that has been deployed worldwide at 900 MHz.”<sup>4</sup>

Ameren’s commitment to private LTE as the right solution for the utility sector is evidenced by its role as a founding member of the Utility Broadband Alliance (UBBA). Like-minded utilities and vendors that serve them came together to form this organization, which describes its mission as assisting its members “in planning and deploying secure, reliable, and resilient private broadband networks to support America’s transforming digital grid.”<sup>5</sup> In addition to Ameren, its current members include Evergy, Inc., National Grid, Southern Linc, and Xcel Energy, as well as 4RF, Burns & McDonnell, Inc., Cisco Systems, Inc., Council Rock, Encore Networks, Inc., Ericsson, Inc., Federated Wireless, Inc., General Electric Company, Motorola Solutions, Inc., Multi-Tech Systems, Inc., pdvWireless, Inc., Sierra Wireless, Inc., Sonim Technologies, Inc., and Tait Communications.

#### **AMEREN COMMENTS ON THE NPRM**

Ameren commends the Commission for taking this step toward creating a broadband opportunity designed to address the specific needs of the utility and CII sectors, as our needs often are not met on consumer-focused networks. While we applaud the Commission for its recognition of the private broadband network needs of this community of users, there are several issues raised in the item that Ameren would like to address – most importantly timing, a guaranteed clearing mechanism, and continued evolution of the band.

#### Timing

Timely access to a broadband solution is critical in enabling Ameren to address its evolving communication needs and capabilities. While the use cases may change over time, and may be different from utility to utility, the basic utility need for broadband is the same. The Commission itself recognized this requirement but may not fully appreciate its urgency. The need is now.

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<sup>4</sup> *Id.*

<sup>5</sup> See [www.UBBA.com](http://www.UBBA.com).

The evolution of the electrical grid, including a changing power generation model, combined with the absolute need to protect these assets from cyber and physical threats, suggests that modernization of the communications core must occur as quickly as possible. As the industry modernizes the power grid, it urgently needs private licensed broadband networks to ensure the security, reliability, and resiliency of its operations. Accordingly, we urge the Commission to move promptly to adopt final rules that will ensure the use of the 900 MHz band for broadband services.

#### Guaranteed Clearing Mechanism

Whether the Commission succeeds in creating opportunities for broadband in the 900 MHz band will depend upon choices it makes in the rules. One of the most important is the mechanism for transitioning the proposed broadband segment from narrowband. While voluntary negotiations to clear this portion of the band are an appropriate and positive way to begin, there must be some form of backstop in order to address potential holdouts in the band.

The Commission recognized the likelihood of holdouts in the NPRM. “A voluntary process [for clearing the broadband allocation] may not be successful in all markets . . . [each incumbent will] have an incentive to holdout for a larger share of the gains than it individually contributes.”<sup>6</sup> This must be addressed. Ameren believes that all retuning costs should be borne by the broadband licensee and all incumbents should be dealt with fairly and provided with comparable facilities if they choose to remain narrowband operators in the band. However, the benefits to Ameren, our fellow utility operators, our electric grid, the American economy, and consumers nationwide should not be delayed by holdouts wishing to profit unreasonably off this process.

In the NPRM, the Commission proposed a success threshold so that if the proposed broadband applicant was able to successfully negotiate voluntarily with a significant percentage of incumbents in a market, the remainder would be subject to mandatory retuning. The Commission should adopt this approach, combining a voluntary process followed by a mandatory process to ensure that markets are cleared in a timely manner.

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<sup>6</sup> *NPRM* at ¶¶25, 37.

We urge the Commission to adopt rules promptly that ensure the nationwide availability of the broadband allocation without undue delay by providing a success-based threshold as a backstop. The stakes are too high to allow delay.

#### Continued Evolutions of the Band.

There are two issues that the Commission can address that will facilitate the full deployment of this band for the utility sector -- access to spectrum in the Commission's inventory, and ultimately the possibility of evolution to a 5X5 MHz broadband license.

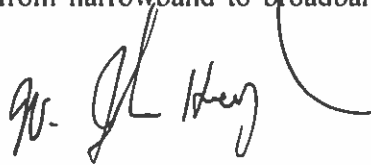
As the Commission recognizes in the NPRM, there are numerous markets in the United States where the Commission holds 900 MHz spectrum in inventory. Some of this spectrum has been vacant for over thirty years. In certain areas, the amount of spectrum held by the Commission is significant. That is the case in Ameren's territory. For example, in the St. Louis area, the Commission holds up to a quarter of the spectrum in inventory, and that number rises as you move further outside the city. The NPRM asks what to do with the Commission inventory. Ameren believes that to do anything other than to include this spectrum in a broadband licensee's offering, and as green space for the relocation of incumbent systems, would run counter to the goals of this proceeding -- namely to deploy broadband. The benefits to society, to citizens, to the utility sector, and to the American economy and the security of our Nation suggest a significant interest in moving this spectrum to market.

Additionally, the Commission raises the issue of a 5x5 MHz broadband license in the band. Several utilities have introduced this as a possibility and the idea has significant merit. Moving from a 3x3 MHz license to a 5x5 MHz license increases capacity geometrically. It would allow the private LTE broadband network to support expanded Ameren needs.

While clearing an entire market in certain areas may be difficult in the near term as some incumbents choose to continue narrowband operations and therefore will have to be relocated, other markets may be devoid of incumbents (as the Commission has recognized), or the ability may exist to clear all incumbents. Allowing for this evolution makes complete sense, whether it happens in markets where no incumbents exist except for the broadband licensee and the FCC or where market forces result in the entire band being cleared. Ameren supports rules that make this evolution a possibility.

## CONCLUSION

Chairman Pai and Commissioners O’Rielly, Carr, Rosenworcel, and Starks, this proceeding. when completed, offers Ameren and the utility sector a near-term tool to deploy private LTE broadband networks. It will continue your efforts to have us lead the world in advanced wireless connectivity. In addition to good spectrum policy, you can create the environment for a more secure, redundant and resilient communications network for the 21<sup>st</sup> century – one that will match and help secure our improving and evolving electric grid. We ask that you move quickly and decisively to ensure this spectrum is available and that the conversion from narrowband to broadband is not delayed in any market.

A handwritten signature in black ink, appearing to read "W. John Hughes", with a large, sweeping flourish extending from the end of the signature.

W. John Hughes

Director, Network Engineering & Operations

Ameren